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EXAMINER	
THANGAVELU, KANDASAMY	
ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/995,180	TILLOTSON, BRIAN JAY	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *April 9, 2002 and* .
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-10 of the application have been examined.

Information Disclosure Statement

2. Acknowledgment is made of the information disclosure statements filed on April 9, 2002 and April 8, 2003 with lists of papers and patents. The papers and patents have been considered.

Drawings

3. The drawings submitted on November 26, 2001 are objected to: The figure numbers and the block identifiers are handwritten with non-uniform character sizes. Uniform character size is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-2, 5, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Brockel et al.** (U.S. Patent 5,794,128) in view of **Park et al.** (U.S. Patent 6,853,852), and further in view of **Kumaran et al.** (U.S. Patent Application 2002/0168983).

6.1 **Brockel et al.** teaches Apparatus and processes for realistic simulation of wireless information transport systems. Specifically as per claim 1, **Brockel et al.** teaches a simulation system for a mobile communication network (Abstract, L1-9; Fig. 2), comprising:

a simulated network including a plurality of nodes (CL5, L25-26; CL6, L23-36; Fig. 13; CL5, L66 to CL6, L1), each having an antenna associated therewith (CL15, L12-15);

a user specified data traffic model in communication with the simulated network (Abstract, L7-9; CL7, L36-40), for providing operational parameters (Fig. 3), including a routing protocol for each the node (CL8, L1-6), to simulate an operational environment for the simulated network (CL3, L29-30); and

a network traffic analyzer for analyzing network traffic within the simulated network and generating an output in accordance therewith (CL16, L15-34).

Brockel et al. does not expressly teach the nodes operating to communicate with one another by one of a synchronous communication link. **Park et al.** teaches the nodes operating to communicate with one another by one of a synchronous communication link (Abstract, L1-3; Fig. 1A), because that would allow synchronous mobile station to communicate with synchronous radio network (CL1, L18-19; CL1, L47-49). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Park et al.** that included the nodes operating to communicate with one another by one of a synchronous communication link. The artisan would have been motivated because that would allow synchronous mobile station to communicate with synchronous radio network.

Brockel et al. does not expressly teach the nodes operating to communicate with one another by one of a time division multiple access (TDMA) communication link. **Kumaran et al.** teaches the nodes operating to communicate with one another by one of a time division multiple access (TDMA) communication link (Fig. 1; Page 1, Para 0007; Page 3, Para 0043), because that would allow a base station to define a series of time slots in individual available frequency channels and use the different time slots to support simultaneous communication with different users (Page 1, Para 0007). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Kumaran et al.** that included the nodes operating to communicate with one another by one of a time division multiple access (TDMA) communication link. The artisan would have been motivated because that would allow a base station to define a series of time

slots in individual available frequency channels and use the different time slots to support simultaneous communication with different users.

6.2 As per claim 2, **Brockel et al., Park et al.** and **Kumaran et al.** teach the simulation system of claim 1. **Brockel et al.** teaches that the network analyzer further operates to sum all radio frequency (RF) interference arriving at each the node (CL3, L29-30).

6.3 As per claim 5, **Brockel et al., Park et al.** and **Kumaran et al.** teach the simulation system of claim 1. **Brockel et al.** does not expressly teach that the simulated network further comprises a link censor for estimating a degree of interference likely to be caused by communications links to be formed in accordance with information provided by the data traffic model. **Kumaran et al.** teaches that the simulated network further comprises a link censor for estimating a degree of interference likely to be caused by communications links to be formed in accordance with information provided by the data traffic model (Abstract, L3-9; Page 1, Para 0006 and Para 0008; Page 3, Para 0043), because that would allow producing a plurality of lists of channel rankings and assigning the lists produced to the base stations for use in assigning channels to service communications with mobile stations (Page 1, Para 0009). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Kumaran et al.** that included the simulated network further comprising a link censor for estimating a degree of interference likely to be caused by communications links to be formed in accordance with information provided by the data traffic model. The artisan would have been motivated because that would

allow producing a plurality of lists of channel rankings and assigning the lists produced to the base stations for use in assigning channels to service communications with mobile stations.

Brockel et al. does not expressly teach the link censor blocking the formation of the synchronous communication links and the TDMA communication links likely to cause unacceptable interference to other the synchronous communication links and the TDMA communication links in the simulated network. **Kumaran et al.** teaches the link censor blocking the formation of the synchronous communication links and the TDMA communication links likely to cause unacceptable interference to other the synchronous communication links and the TDMA communication links in the simulated network (Page 1, Para 0008 and Para 0009), because that would allow reducing the overall inter-communication interferences in the synchronous communication links and the TDMA communication links (Page 1, Para 0008; Page 1, Para 0007). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Kumaran et al.** that included the link censor blocking the formation of the synchronous communication links and the TDMA communication links likely to cause unacceptable interference to other the synchronous communication links and the TDMA communication links in the simulated network. The artisan would have been motivated because that would allow reducing the overall inter-communication interferences in the synchronous communication links and the TDMA communication links.

6.4 As per claim 6, **Brockel et al., Park et al.** and **Kumaran et al.** teach the simulation system of claim 1. **Brockel et al.** does not expressly teach that the simulated network further

comprises a synchronous link controller for providing initial operating parameters for the synchronous links at a start of a network simulation operation. **Park et al.** teaches that the simulated network further comprises a synchronous link controller for providing initial operating parameters for the synchronous links at a start of a network simulation operation (Abstract, L6-9), because that would allow synchronous mobile station to communicate with synchronous radio network (CL1, L18-19; CL1, L47-49) using the operating parameters of the synchronous network (CL3, L25-58). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Park et al.** that included the simulated network further comprising a synchronous link controller for providing initial operating parameters for the synchronous links at a start of a network simulation operation. The artisan would have been motivated because that would allow synchronous mobile station to communicate with synchronous radio network using the operating parameters of the synchronous network.

6.5 As per Claims 8 and 9, these are rejected based on the same reasoning as Claims 1 and 6, supra. Claims 8 and 9 are method claims reciting the same limitations as Claims 1 and 6, as taught throughout by **Brockel et al., Park et al.** and **Kumaran et al.**

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Brockel et al.** (U.S. Patent 5,794,128) in view of **Park et al.** (U.S. Patent 6,853,852), and **Kumaran et al.** (U.S. Patent Application 2002/0168983), and further in view of **Black et al.** (U.S. Patent 6,377,561).

7.1 As per claim 3, **Brockel et al., Park et al.** and **Kumaran et al.** teach the simulation system of claim 1. **Brockel et al.** does not expressly teach that the TDMA communication links comprise beam-hopping TDMA type links. **Black et al.** teaches that the TDMA communication links comprise beam-hopping TDMA type links (CL19, L55-62), because that would allow TDMA uplink to be shared across several geographical spots (CL19, L60-62). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Black et al.** that included the TDMA communication links comprising beam-hopping TDMA type links. The artisan would have been motivated because that would allow TDMA uplink to be shared across several geographical spots.

8. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Brockel et al.** (U.S. Patent 5,794,128) in view of **Park et al.** (U.S. Patent 6,853,852), and **Kumaran et al.** (U.S. Patent Application 2002/0168983), and further in view of **Ishikawa** (U.S. Patent Application 2002/0022482).

8.1 As per claim 4, **Brockel et al., Park et al.** and **Kumaran et al.** teach the simulation system of claim 1. **Brockel et al.** does not expressly teach that the simulated network further comprises a TDMA link controller for providing initial operating parameters for the TDMA communications links. **Ishikawa** teaches that the simulated network further comprises a TDMA link controller for providing initial operating parameters for the TDMA communications links

(Page 1, Para 0003, Para 0008 and Para 0011), because that would allow evaluating the radio wave propagation state within the service area based on various operating parameters (Page 1, Para 0011). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Ishikawa** that included the simulated network further comprising a TDMA link controller for providing initial operating parameters for the TDMA communications links. The artisan would have been motivated because that would allow evaluating the radio wave propagation state within the service area based on various operating parameters.

8.2 As per Claim 10, it is rejected based on the same reasoning as Claim 4, supra. Claim 10 is a method claims reciting the same limitations as Claim 4, as taught throughout by **Brockel et al., Park et al., Kumaran et al.** and **Ishikawa.**

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Brockel et al.** (U.S. Patent 5,794,128) in view of **Park et al.** (U.S. Patent 6,853,852), and **Kumaran et al.** (U.S. Patent Application 2002/0168983), and further in view of **Marshall** (U.S. Patent 6,834,180) and **Robert et al.** (U.S. Patent 6,104,712).

9.1 As per claim 7, **Brockel et al., Park et al.** and **Kumaran et al.** teach the simulation system of claim 1. **Brockel et al.** does not expressly teach that the simulated network further comprises a node controller in communication with at least one of the nodes for setting a location and orientation of each of the nodes, and the relative location and orientation of each the antenna

on the nodes. **Marshall** teaches that the simulated network further comprises a node controller in communication with at least one of the nodes for setting a location and orientation of each of the nodes, and the relative location and orientation of each the antenna on the nodes (Abstract, L1-3; CL2, L53-59; CL7, L26-31; CL13, L7-9), because the antenna gains depend on the location and orientations of the receiving and transmitting antennas (CL12, L59-61; CL13, L7-9); and it would allow determining the signal path loss and power available from the antenna at various locations with the cell coverage area (CL2, L53-59). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation system of **Marshall** that included the simulated network further comprising a node controller in communication with at least one of the nodes for setting a location and orientation of each of the nodes, and the relative location and orientation of each the antenna on the nodes. The artisan would have been motivated because the antenna gains would depend on the location and orientations of the receiving and transmitting antennas; and it would allow determining the signal path loss and power available from the antenna at various locations with the cell coverage area.

Brockel et al. does not expressly teach that the simulated network further comprises a node controller in communication with at least one of the nodes for setting velocity vectors of each of the nodes. **Robert et al.** teaches that the simulated network further comprises a node controller in communication with at least one of the nodes for setting velocity vectors of each of the nodes (CL7, L4-6), because that would allow determining the expected path of a migratory node (CL7, L4-6). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the simulation system of **Brockel et al.** with the simulation

system of **Robert et al.** that included the simulated network further comprising a node controller in communication with at least one of the nodes for setting velocity vectors of each of the nodes. The artisan would have been motivated because determining the expected path of a migratory node.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on 571-272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Thangavelu
Art Unit 2123
February 19, 2005